43rd Annual NDIA Symposium

U.S. Navy Target Programs

Aerial Target and Decoy Systems Program Office PMA-208

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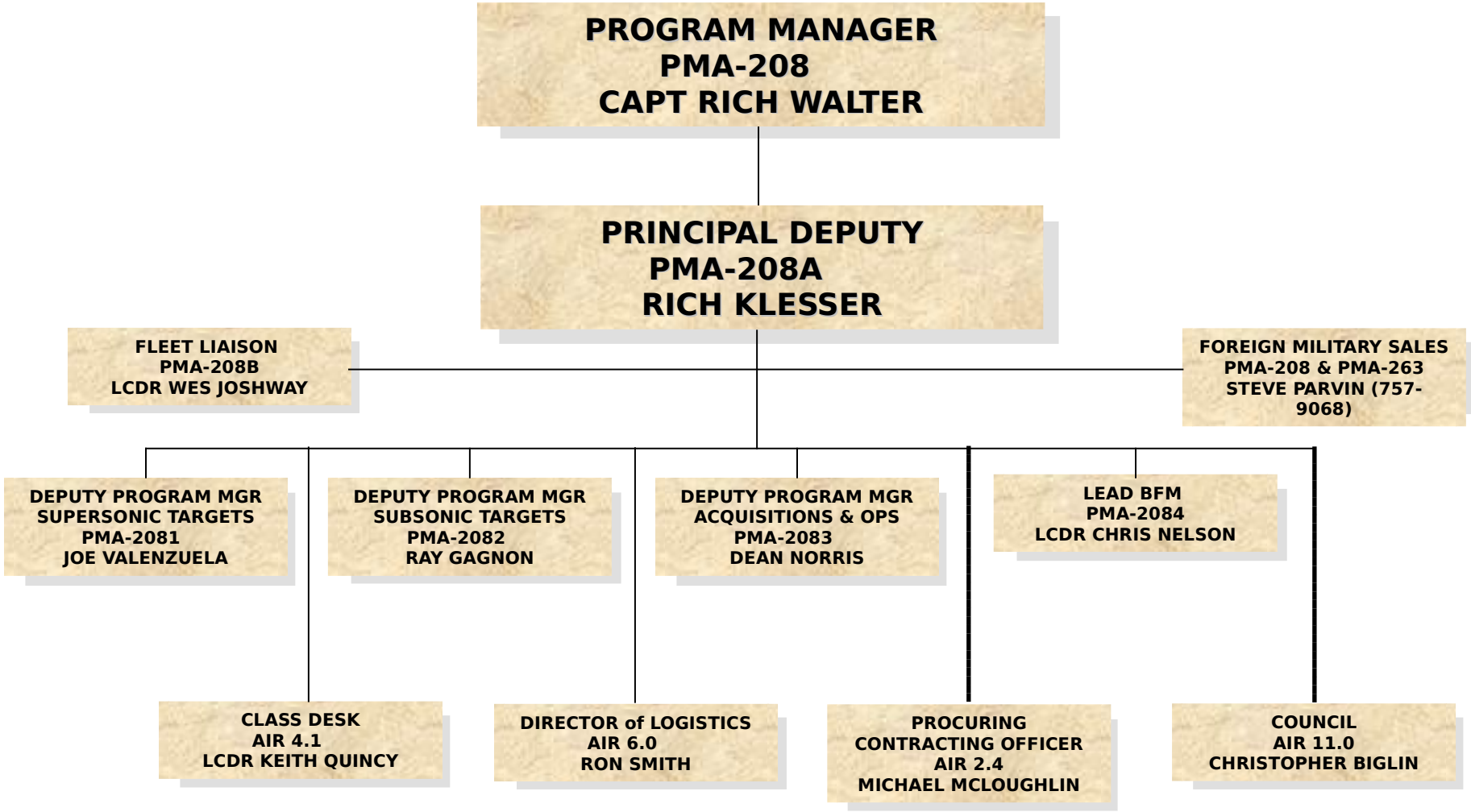
NAVAIR

Outline

- Organization
- Product Line
- Operating Sites
- Navy Aerial Targets Roadmap
- Supersonic Targets
- Subsonic Targets
- Target Control Systems
- Summary

PMA-208
Aerial Targets and Decoys
Leadership



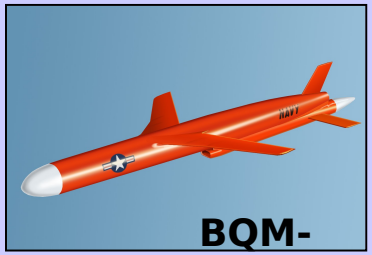
Aerial Targets and Decoys PMA-208 Product Line

Subsonic

BQM-34S

BQM-74E

BQM-74F



Supersonic

GQM-163A

AQM-37

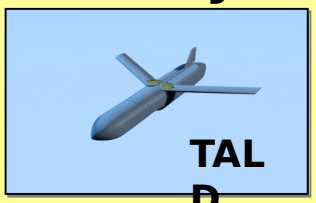
MA-31

QF-4

THREAT D

Decoys

TALD

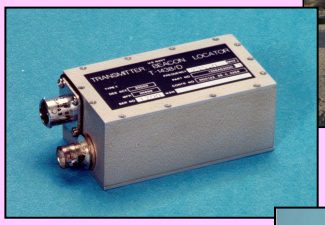


ITALD

Miscellaneous

QLT-1C

Common TA/AS



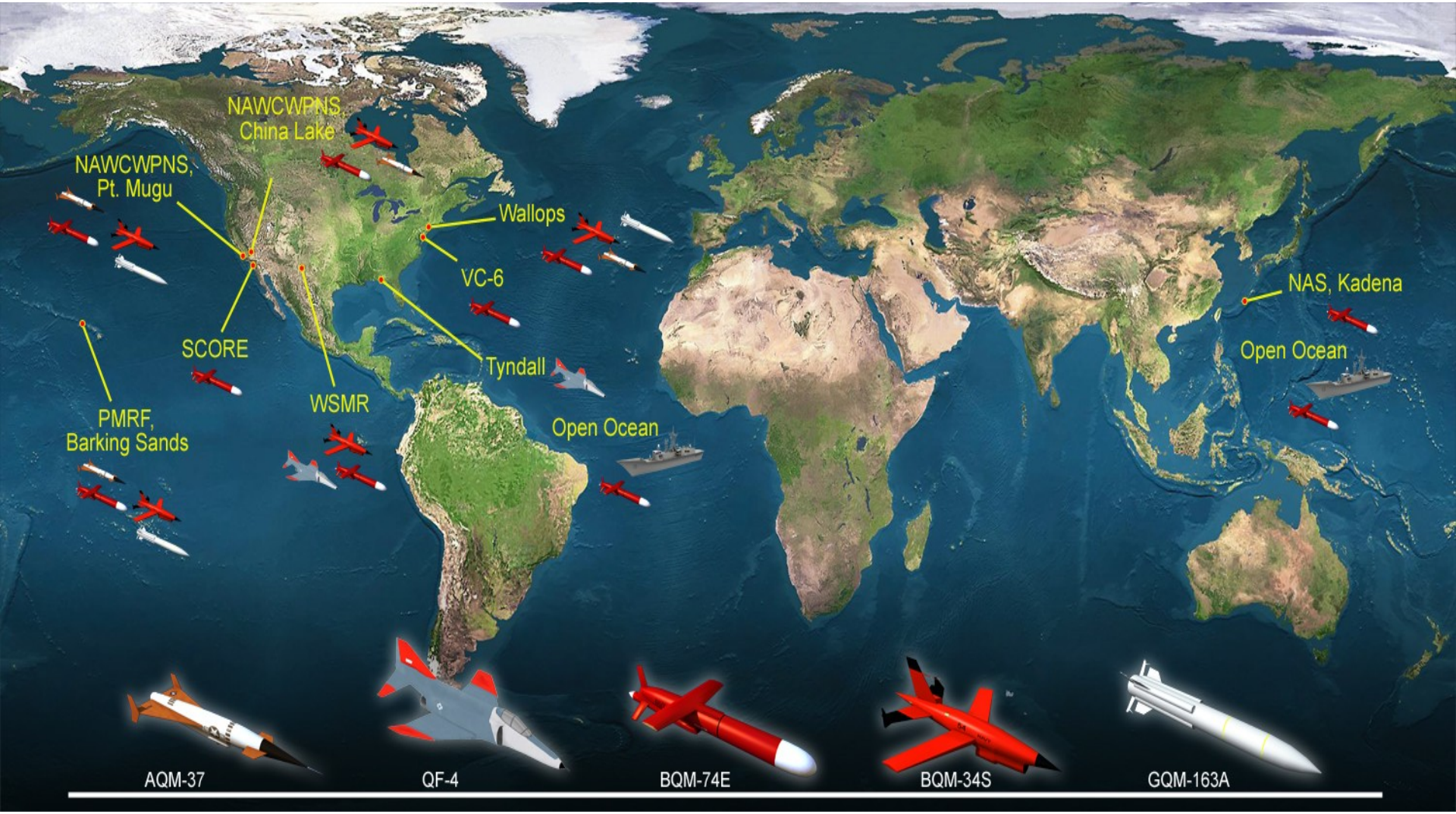
Threat Simulation

TDU-32

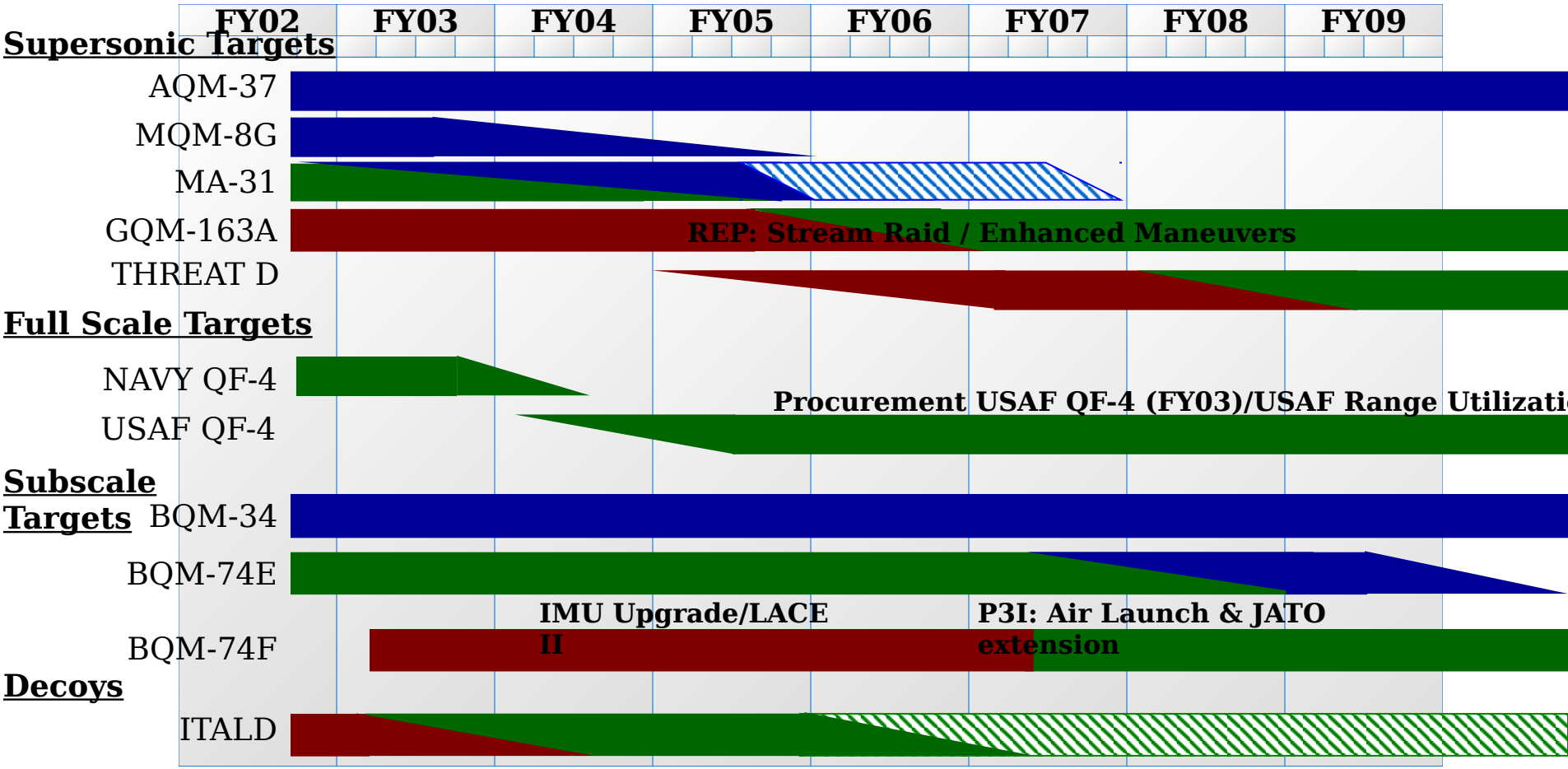
SNTC

ARME

Operating Sites



Navy Aerial Targets Roadmap



Supersonic Targets
GQM-163A EMD-5
4-22-05

U.S. Navy SSST Update

- **MA-31**
  - Meets Threat A & B SSST requirements
  - Provides a high diver threat capability
- **GQM-163 Coyote**
  - Meets Threat A, B, & C SSST requirements
    - Conducting Air-launch feasibility study
    - Investigating Power-dive feasibility
- **Threat D**
  - Emergent requirement

MA-31

MA-31 Update

- **Program initiated via FCT in 1995-1998. 13 shots completed in US with Russia Contractor support.**
- **The USN is on contract with Boeing for the delivery of 41 MA-31 targets. Original contract to Boeing let in 2000.**
- **Deliveries have been problematic**

GQM-163A Supersonic Sea Skimming Target

GQM-163 Video

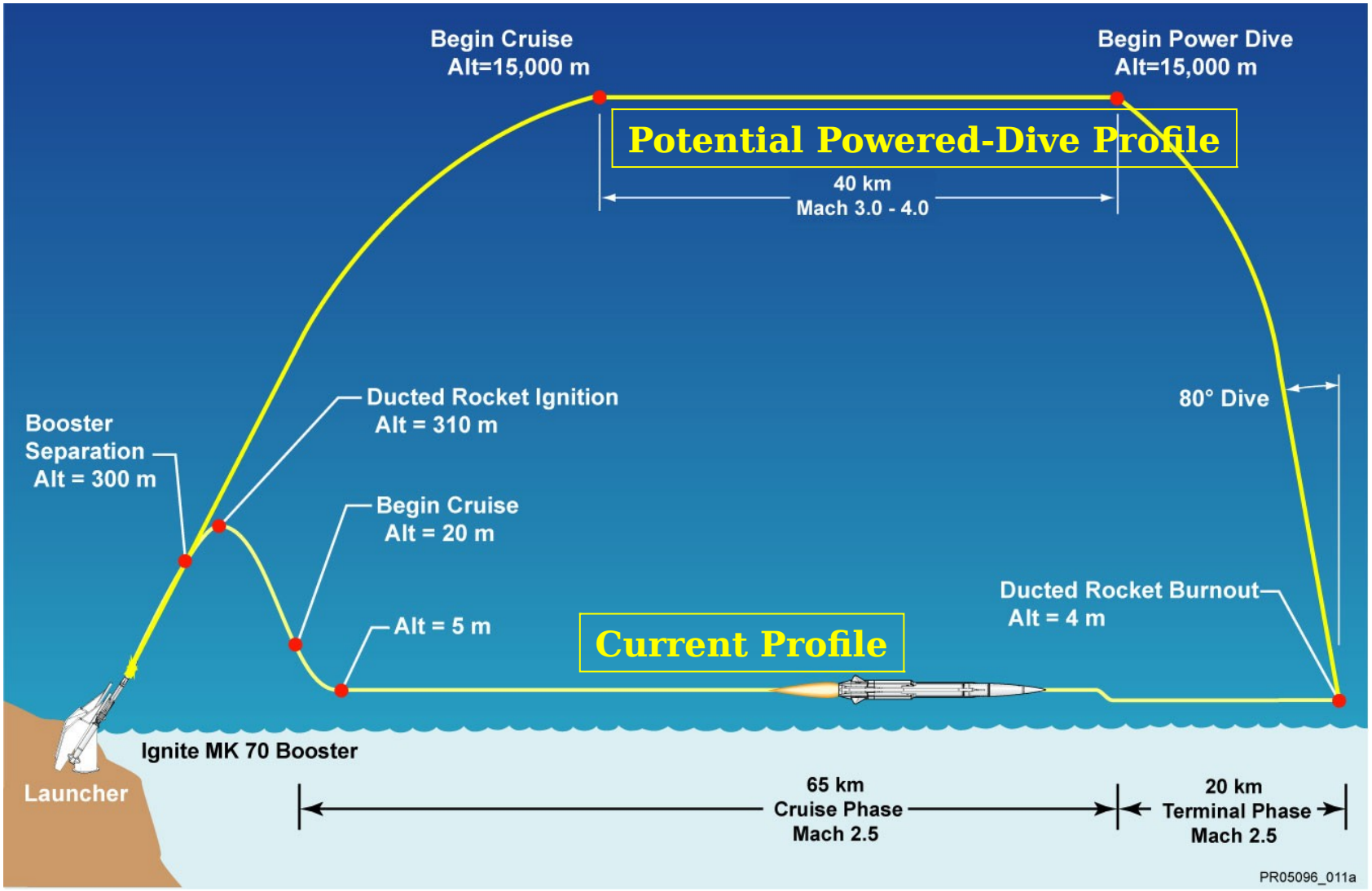
GQM-163 Program Status

- **Completed 5 EMD test flights**
  - Demonstrated boost, separation, cruise and terminal maneuvers and flight termination
  - Demonstrated cruise at 50 feet/Mach 2.8
  - Demonstrated 10g maneuvers in terminal phase at 15 feet. Combined maneuvers to 11.8gs at 50 feet
  - REP Projects: Demonstrated Moving End Point (MEP) and enhanced maneuver
- **LRIP-II contract for 10 missiles awarded April 2005. LRIP-I missile deliveries for 10 missiles started June 2005.**
- **MS III Completed June 2005. Plan to award FRP-1 early FY06.**
- **First Operations in support of fleet completed 6 October 2005**
  - Single GQM missile shot
- **Prime Contractor: Orbital Sciences Corporation**

GQM-163 Supports Threat A, B, C, requirements

GQM-163 First Operational Flight

GQM-163A
Powered-Dive Initiative



THREAT-D

Threat D Update

- **Requirement**
  - Sensitivity analysis completing at APL to develop Threshold/Objectives for ICD/CDD
  - N43, IDA, and DOT&E have been briefed on OBJ/Threshold numbers.
  - Threat D requirements group meeting planned this month to finalize ICD/CDD and initiate routing.
- **Acquisition**
  - TSAR Feasibility Study conducted at APL 2002-2005
  - PMA-208 conducted RFI with Industry in February 2005
  - PMA-208 plans RFP release 2nd QTR FY2006
  - Planned contract award early FY2007
  - Website update in next few days: www.navair.navy.mil/pma208

Threat D Target Requirement is SM-6 OT&E in Fall 2010

AQM-37

- **Medium to high altitude supersonic cruise with dive**
  - Mach 2.0 – 4.0
  - Range 100 mi
  - Altitude 1000 ft – 100 Kft
  - Demonstrated TBM profiles (300 Kft, 120 nmi downrange)
  - F-16 launch platform
- **Out of Production System**
  - Last Delivery Dec 01
- **Conduct approximately 10-15 operations per year (~ half FMS)**

SSST Summary

- **GQM-163 Coyote in Production**
  - Superb performance. Coyote will be long term workhorse for SSST mission
  - GQM-163 option being evaluated for power dive capability
- **MA-31**
  - Desired as target and as high diver solution
  - Source of missiles remains difficult
- **Threat D requirement definition and acquisition approach underway.**

Subsonic Targets and Decoys

BQM-74E

- **Production**
  - Procurement rate 60/yr
  - Training and T&E workhorse
- **Missions:**
  - **High fidelity Anti-ship Cruise Missile Surroga**
  - **Low-fidelity A/C simulator**
  - Altitude 7 ft – 40 Kft
  - Endurance 68 min
  - Ground Launch; Shipboard Launch;
  - Air Launch: C-130, Gulfstream, F-16
- **Product Improvements**
  - Low Altitude Control Enhancement (LACE)
    - Allows customer to choose from 5 preprogrammed maneuvers or program their own
    - Fielded now
  - Programmable Semi-Autonomous Waypoint Navigation
    - Selectable Lost Carrier Sensitivity from waypoint to waypoint
    - Return to Recovery Area
    - Utilizes DOD standard PFPS Mission Planning
    - FY06 fielding planned
- **Prime Contractor – Northrop Grumman**

Current Inventory – 214

FY05 Ops/Expenditures – 231/79

FY04 Ops/Expenditures – 198/60

BQM-74F

- **Addresses performance shortfalls of BQM-74 in meeting ASCM surrogate role**
  - Increased Speed, Range, Endurance, Maneuverabi
    Payload capacity

Parameter	BQM-74E	BQM-74F
Minimum Speed @ 7ft MSL (Mach)	0.42	0.47
Maximum Speed @ 7ft MSL (Mach)	0.82	0.92
Design g Limit	6	8
Range @ 50 ft MSL (nmi) Maximum Speed M = 0.9	148	225
Range @ 20,000 ft MSL, 300 KTAS (nmi)	342	500
Endurance @ 20,000 ft MSL (min) 300 KTAS Unconstrained Airspeed	68	 115
Weights		
Fuel Weight (lbs)	111	186
Gross Flight Weight (lbs)	450	588

First Flight – 29 Aug 05

- **Four Year Development Program, FY02-06**
- **Production Decision in FY06**
- **Ground/Shipboard Launch, P3I for Air Launch Common Digital Architecture (CDA) Compliant**
- **Prime Contractor - Northrop Grumman**

BQM-34S

- **Sustainment**
  - Drawdown & maintain existing Inventory
- **Missions:**
  - **Low fidelity A/C simulator**
  - **T&E workhorse – Special Configurations**
    - Harpoon Seeker integration
- **Product Improvements**
  - **UIAI integration:**
    - Replace existing autopilots with UIAU from BQM-7
    - Common avionics, radar altimeter, Support Equip with current production BQM-74E or 74F
    - Reduced Logistics
    - Avoid obsolescence
    - Allows for performance growth if required
      - » LACE
      - » PAWN
    - Testing to be completed by May ‘06
    - FY07 fielding planned
- **Prime Contractor – Northrop Grumman**

Current Inventory – 213

FY05 Ops/Expenditures – 24/2

FY04 Ops/Expenditures – 24/4

Subsonic Targets Summary

- **ASCM Threat capabilities drive Navy subsonic target requirements**
  - BQM-74F ECP
- **BQM-74 is Navy workhorse**
  - Relatively low cost
  - Shipboard launch / portability
- **BQM-34 still a viable system**
  - Existing inventory will last indefinitely @ current usage rate
- **Common Avionics across all Navy BQM series targets**
  - Autopilot, Radar altimeter, Support Equipment
  - Utilize BQM-74E or 74F production configuration
  - Reduced Logistics
  - Avoid obsolescence
  - Allows for performance growth if required

Navy Target Control

System for Naval Target Control

FAS (Frequency Agile System)

Current: SNTC System	Future: SNTC System with

- Senses RF Interference or Multipathing and Automatically Change Frequencies To Avoid It
- Compatible With Existing Ground Systems, Such As the System for Naval Target Control (SNTC)

- UHF 435–450 MHz
- **Single Frequency at a time**
- BQM-74/BQM-34 capable
- Low transponder cost
- 200 nmi line of sight
- 400 nmi via Relay
- **Fly 8 subscales @ 7 Hz**
- **Training**/T&E

→

- UHF 420–450 MHz
- **Changes Freq to avoid interference**
- BQM-74/BQM-34 capable/Sea-borne targets
- Low transponder cost
- 200 nmi line of sight
- 400 nmi via Relay
- **Fly 32 subscales @ 7 Hz**
- **Training/T&E**

Fleet Perspective

- CWO2 Doug Park, CFAO OIC for Targets

CFAO Operations